



# **CALSCIENCE**

WORK ORDER NUMBER: 14-04-2162

The difference is service



AIR SOL WATER MARINE CHEMISTRY

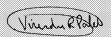
**Analytical Report For** 

Client: CH2M Hill

Client Project Name: Dynegy SBPP / 482070.01.03

**Attention:** James Laws

6 Hutton Centre Drive, Suite 700 Santa Ana, CA 92707-5735



Approved for release on 04/30/2014 by: Virendra Patel Project Manager



Resultance

Email your PM K

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

MARKE A

740) Engle Via Gurian Seria CS Oriote (E.C. - TR. 714 XS 550) - FX 714 X4750 - Grass Galerian con

NELAP DISSEZOUAL DOD-ELAP DE ESDAT E OSDIACIDERO DE SCADARO DE SISA ARRO



# **Contents**

Client Project Name: Dynegy SBPP / 482070.01.03

Work Order Number: 14-04-2162

1	Work Order Narrative	3
2	Sample Summary	4
3	Client Sample Data	5 5
4	Quality Control Sample Data. 4.1 MS/MSD. 4.2 LCS/LCSD.	8
5	Sample Analysis Summary	10
6	Glossary of Terms and Qualifiers	11
7	Chain of Custody/Sample Receipt Form.	12



#### Work Order Narrative

Work Order: 14-04-2162 Page 1 of 1

#### **Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/29/14. They were assigned to Work Order 14-04-2162.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

#### **Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

#### **Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

#### **Additional Comments:**

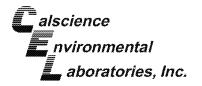
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New\_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

#### **Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



# **Sample Summary**

 Client:
 CH2M Hill
 Work Order:
 14-04-2162

 6 Hutton Centre Drive, Suite 700
 Project Name:
 Dynegy SBPP / 482070.01.03

Santa Ana, CA 92707-5735 PO Number:

Date/Time 04/29/14 18:25 Received:

Number of 4

Containers:

Attn: James Laws

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SBPP-PCB9c-042914	14-04-2162-1	04/29/14 09:10	1	Solid
SBPP-PCB10c-042914	14-04-2162-2	04/29/14 09:25	1	Solid
SBPP-PCB11c-042914	14-04-2162-3	04/29/14 09:30	1	Solid
SBPP-PCB12c-042914	14-04-2162-4	04/29/14 09:15	1	Solid



### **Analytical Report**

CH2M Hill 6 Hutton Centre Drive, Suite 700 Santa Ana, CA 92707-5735 Date Received: Work Order: Preparation: 04/29/14 14-04-2162 EPA 3545

Method: Units: EPA 8082 ug/kg

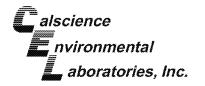
Project: Dynegy SBPP / 482070.01.03

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB9c-042914	14-04-2162-1-A	04/29/14 09:10	Solid	GC 58	04/29/14	04/30/14 13:09	140429L13
Parameter		Result	RL		<u>DF</u>	Qua	ılifier <u>s</u>
Aroclor-1016		ND	50		1.00		
Aroclor-1221		ND	50		1.00		
Aroclor-1232		ND	50		1.00		
Aroclor-1242		ND	50		1.00		
Aroclor-1248		ND	50		1.00		
Aroclor-1254		ND	50		1.00		
Aroclor-1260		ND	50		1.00		
Aroclor-1262		ND	50		1.00		
Surrogate		Rec. (%)	<u>Co</u>	ntrol Limits	Qualifiers		
Decachlorobiphenyl		92	24-	-168			
2,4,5,6-Tetrachloro-m-Xylene		99	25-	-145			

SBPP-PCB10c-042914	14-04-2162-2-A	04/29/14 09:25	Solid GC 58	04/29/14	04/30/14 13:27	140429L13
<u>Parameter</u>		Result	<u>RL</u>	<u>DF</u>	Qua	alifiers
Aroclor-1016		ND	50	1.00		
Aroclor-1221		ND	50	1.00		
Aroclor-1232		ND	50	1.00		
Aroclor-1242		ND	50	1.00		
Aroclor-1248		ND	50	1.00		
Aroclor-1254		ND	50	1.00		
Aroclor-1260		ND	50	1.00		
Aroclor-1262		ND	50	1.00		
Surrogate		Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl		89	24-168			
2,4,5,6-Tetrachloro-m-Xylene		96	25-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



### **Analytical Report**

CH2M Hill 6 Hutton Centre Drive, Suite 700 Santa Ana, CA 92707-5735 Date Received: Work Order: Preparation:

14-04-2162 EPA 3545

Method: Units: EPA 8082 ug/kg

04/29/14

Project: Dynegy SBPP / 482070.01.03

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBPP-PCB11c-042914	14-04-2162-3-A	04/29/14 09:30	Solid	GC 58	04/29/14	04/30/14 13:45	140429L13
Parameter		<u>Result</u>	RL	=	<u>DF</u>	Qua	<u>lifiers</u>
Aroclor-1016		ND	50	)	1.00		
Aroclor-1221		ND	50	)	1.00		
Aroclor-1232		ND	50	)	1.00		
Aroclor-1242		ND	50	)	1.00		
Aroclor-1248		ND	50	)	1.00		
Aroclor-1254		ND	50	)	1.00		
Aroclor-1260		ND	50	)	1.00		
Aroclor-1262		ND	50	1	1.00		
Surrogate		Rec. (%)	<u>Cc</u>	ontrol Limits	Qualifiers		
Decachlorobiphenyl		90	24	-168			
2,4,5,6-Tetrachloro-m-Xylene		98	25	-145			

SBPP-PCB12c-042914	14-04-2162-4-A	04/29/14 09:15	Solid GC 68	04/29/14	04/30/14 140429L13 14:03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Aroclor-1016		ND	50	1.00	
Aroclor-1221		ND	50	1.00	
Aroclor-1232		ND	50	1.00	
Aroclor-1242		ND	50	1.00	
Aroclor-1248		ND	50	1.00	
Aroclor-1254		ND	50	1.00	
Aroclor-1260		ND	50	1.00	
Aroclor-1262		ND	50	1.00	
<u>Surrogate</u>		Rec. (%)	Control Limits	<u>Qualifiers</u>	
Decachlorobiphenyl		89	24-168		
2,4,5,6-Tetrachloro-m-Xylene		94	25-145		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



### **Analytical Report**

CH2M Hill 6 Hutton Centre Drive, Suite 700 Santa Ana, CA 92707-5735 Date Received: Work Order: Preparation: 04/29/14 14-04-2162 EPA 3545

Method: Units: EPA 8082

ug/kg

Project: Dynegy SBPP / 482070.01.03

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-535-2581	N/A	Solid	GC 58	04/29/14	04/30/14 12:15	140429L13
<u>Parameter</u>		Result	RL		<u>DF</u>	Qua	llifier <u>s</u>
Aroclor-1016		ND	50		1.00		
Aroclor-1221		ND	50		1.00		
Aroclor-1232		ND	50		1.00		
Aroclor-1242		ND	50		1.00		
Aroclor-1248		ND	50		1.00		
Aroclor-1254		ND	50		1.00		
Aroclor-1260		ND	50		1.00		
Aroclor-1262		ND	50		1.00		
Surrogate		Rec. (%)	Co	ontrol Limits	Qualifiers		
Decachlorobiphenyl		94	24	-168			
2,4,5,6-Tetrachloro-m-Xylene		92	25	-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Page 1 of 1

0-25



Project: Dynegy SBPP / 482070.01.03

Aroclor-1260

ND

100.0

87.16

# **Quality Control - Spike/Spike Duplicate**

 CH2M Hill
 Date Received:
 04/29/14

 6 Hutton Centre Drive, Suite 700
 Work Order:
 14-04-2162

 Santa Ana, CA 92707-5735
 Preparation:
 EPA 3545

 Method:
 EPA 8082

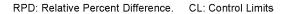
Quality Control Sample ID	Туре		Matrix	Inst	rument	Date Prepared	Date Ana	lyzed	MS/MSD Ba	tch Number
SBPP-PCB9c-042914	Sample		Solid	GC	58	04/29/14	04/30/14	13:09	140429513	
SBPP-PCB9c-042914	Matrix Spike		Solid	GC	58	04/29/14	04/30/14	12:33	140429513	
SBPP-PCB9c-042914	Matrix Spike D	uplicate	Solid	GC	58	04/29/14	04/30/14	12:51	140429813	
Parameter	<u>Sample</u> <u>Conc.</u>	<u>Spike</u> <u>Added</u>	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aroclor-1016	ND	100.0	107.7	108	91.96	92	50-135	16	0-20	

87

90.27

90

50-135



04/29/14

EPA 3545



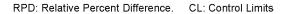
# **Quality Control - LCS**

Date Received: CH2M Hill Work Order: 6 Hutton Centre Drive, Suite 700 14-04-2162 Preparation: Santa Ana, CA 92707-5735

Method: EPA 8082

Project: Dynegy SBPP / 482070.01.03 Page 1 of 1

Quality Control Sample ID	Туре	Matrix	Instrument	Date	Prepared	Date Analyzed	LCS Bato	h Number
099-12-535-2581	LCS	Solid	GC 58	04/29	/14	04/30/14 11:57	140429L	13
<u>Parameter</u>		Spike Added	Conc. Recov	<u>ered</u>	LCS %Re	c. %Rec	. CL	Qualifiers
Aroclor-1016		100.0	85.85		86	50-13	5	
Aroclor-1260		100.0	84.30		84	50-13	5	

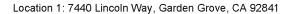






# Sample Analysis Summary Report

Work Order: 14-04-2162				Page 1 of 1
<u>Method</u>	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8082	EPA 3545	669	GC 58	1





SG

Ζ

#### **Glossary of Terms and Qualifiers**

Work Order: 14-04-2162 Page 1 of 1

Qualifiers	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
В	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.

- X % Recovery and/or RPD out-of-range.
  - Analyte presence was not confirmed by second column or GC/MS analysis.

The sample extract was subjected to Silica Gel treatment prior to analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

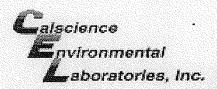
A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

D

Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively. DISTRIBUTION: White with final report, Green and Yellow to Client.

Resource to Contestings

ED\_002285\_00003655-00012



WORK ORDER #: 14-04-2 0 0 2

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CH2MHILL	DATE:	04/29	/14
TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C - 6.0 °C, not froz Temperature	Blank day of samp	☐ Sampl	e
CUSTODY SEALS INTACT:  Cooler		Checked b	
SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	p		
COC document(s) received complete			
<ul> <li>□ Collection date/time, matrix, and/or # of containers logged in based on sample label</li> <li>□ No analysis requested.</li> <li>□ Not relinquished.</li> <li>□ No date/time relinquished.</li> </ul>			
Sampler's name indicated on COC			
Sample container label(s) consistent with COC			
Sample container(s) intact and good condition	<i>A</i>		
Proper containers and sufficient volume for analyses requested			
Analyses received within holding time	🗷		
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	🔲		ď
Proper preservation noted on COC or sample container	🗆		Ø
Volatile analysis container(s) free of headspace	🗆		Ø
Tedlar bag(s) free of condensation			ø
Solid:   40zCGJ   80zCGJ   160zCGJ   Sleeve ()   EnCor	res® 🏻 Terra	aCores® □_	
Aqueous: □VOA □VOAh □VOAna₂ □125AGB □125AGBh □125AGB			
□500AGB □500AGJ □500AGJs □250AGB □250CGB □250CGE			
□250PB □250PBn □125PB □125PBznna □100PJ □100PJna <sub>2</sub> □_			
Air: □Tedlar <sup>®</sup> □Canister Other: □ Trip Blank Lot#:			: <u>807</u>

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope

Preservative: h; HCL n: HNO<sub>3</sub> na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure znna: ZnAc<sub>2</sub>+NaOH f: Filtered Scanned by: 779

Reviewed by: 739